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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,086	08/26/2003	James F. Bredt	ZCO-107CP2	5896

51414 7590 07/27/2006

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BOSTON, MA 02109-2881

EXAMINER
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SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/650,086	<b>Applicant(s)</b> BREDT ET AL.	
	<b>Examiner</b> Callie E. Shosho	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-24,26-41,43-55,57-68,70-74 and 76-78 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 38,58-62,70-74,76 and 77 is/are allowed.  
 6) ☒ Claim(s) 1-7,9-14,16,17,20,22-24,26-33,35-37,39-41,43-55,57,63-67 and 78 is/are rejected.  
 7) ☒ Claim(s) 15,18,19,21,34 and 68 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. All outstanding rejections except that those described below are overcome by applicants' amendment filed 5/9/06. It is noted that the double patenting rejection of record with respect to Bredt et al. '429 (U.S. 6,610,429) is overcome by applicants filing of proper terminal disclaimer on 5/9/06.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 50-55, 57, and 63-65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 50 has been amended to recite "a first particulate adhesive consisting essentially of partially hydrolyzed polyvinyl alcohol". It is the examiner's position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the cited phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not

pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

On page 14 of the amendment filed 5/7/06, applicants state that claim 50 has been amended to include the limitation of claim 56 which has been cancelled. However, it is noted that original claim 56 recited “the first particulate adhesive is partially hydrolyzed polyvinyl alcohol”. Given that the phrase “consisting essentially of” limits the scope of the first particulate adhesive to the partially hydrolyzed polyvinyl alcohol and that which does not materially affect the basic and novel characteristics of the first particulate adhesive, the use of the phrase “consisting essentially of” with respect to the first particulate adhesive appears to allow the first particulate adhesive to include ingredients other than the actual particulate adhesive (i.e. partially hydrolyzed polyvinyl alcohol) for which there is no support in the specification as originally filed.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, which depends on claim 1, recites that the “filler has mean particle size between about 20 and about 200 microns” while claim 1 has been amended to recite “filler comprising plaster and a polymer”. Thus, the scope of claim 5 is confusing because it is not clear which filler

has particle size between about 20 and about 200 microns – the plaster, the polymer, each of the plaster and polymer, the combination of plaster and polymer, etc. Clarification is requested.

### **Double Patenting**

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-7, 9-14, 16-17, 20, 22-24, 26-33, 35-37, 39-41, 43-49, 66-67, and 78 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 9-24, and 83 of copending Application No. 10/848,831. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the explanation given in paragraph 4 of the office action mailed 3/23/06.

**NOTE:** On page 15 of the amendment filed 5/9/06, applicants state that the double patenting rejection of record with respect to 10/848,831 is overcome by the enclosed Statement Regarding Common Ownership of Application and Cited Reference.

However, while such statement precludes a rejection under 35 USC 103(a) based upon the commonly assigned case as a reference under 35 USC 102(f) or (g) (see paragraphs 5-6 of the office action mailed 3/23/06) and thus, establishes common ownership, such statement does not overcome the above double patenting rejection of record. It is noted that a double patenting rejection is obviated by filing of terminal disclaimer.

**Allowable Subject Matter**

8. Claims 38, 58-62, 70-74, and 76-77 are allowable over the “closest” prior art GB 2048235 and Maynard et al. (U.S. 3,297,601) for the following reasons:

GB 2048235 discloses dry composition comprising 35-95% plaster possessing particle size of less than 150  $\mu\text{m}$ , 1-01% polyvinyl alcohol binder, i.e. particulate adhesive, 0-64% limestone having particle size less than 100  $\mu\text{m}$ , 0-5% starch, and 0-0.06% citric acid. There is also disclosed kit comprising the dry composition and water.

Maynard et al. discloses dry composition comprises 45-90% gypsum or calcium semihydrate, 4-10% polyvinyl acetate binder, i.e. particulate adhesive, 0.1-65% accelerator such as aluminum sulfate or terra alba, 0.5-2% filler such as limestone, and starch. There is also disclosed a kit comprising the dry composition and water.

However, there is no disclosure or suggestion in either GB 2048235 or Maynard et al. of method of three dimensional printing as required in present claim 38. Further, there is no disclosure in either GB 2048235 or Maynard et al. of three dimensional printing composition comprising plaster, first particulate adhesive, second particulate adhesive, and accelerator wherein the first particulate adhesive is dextrin as required in present claim 58. Additionally, while each of GB 2048235 and Maynard et al. disclose kit comprising the composition and aqueous fluid, there is no disclosure in either reference that the aqueous fluid comprises humectant or flow rate enhancer as required in present claims 71 and 72, respectively. Further, there is no disclosure in GB 2048235 of accelerator or oil and no disclosure in Maynard et al. of oil and thus, no disclosure in either reference of three dimensional printing composition comprising plaster, particulate adhesive, accelerator, filler, and oil as required in present claim 72.

9. Claims 15, 18-19, 21, 34, and 68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 15, 18-19, 21, 34, and 68 would be allowable if rewritten in independent form as described above given that there is no disclosure in the "closest" prior art GB 2048235 and Maynard et al. of three dimensional printing composition comprising (i) particulate adhesive that is, or filler that further comprises, carbohydrate as required in present claim 15, (ii) filler comprising plaster, polymer, and organic acid as required in present claims 18-19 and 21, or (iii) polyvinyl pyrrolidone copolymer with vinyl acetate and mean particle size between about 20 and about 200 microns as required in present claim 34. Further, there is no disclosure in either GB 2048235 or Maynard et al. of kit comprising three dimensional printing composition and aqueous fluid wherein the aqueous fluid comprises accelerator as required in present claim 68.

### **Conclusion**

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37



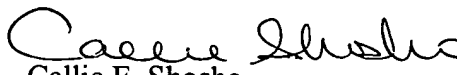
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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
7/22/06